

# PATENT SPECIFICATION

1,067,845



DRAWINGS ATTACHED

1,067,845

Date of filing Complete Specification: Oct. 12, 1964.

Application Date: July 10, 1965.

No. 27256/63.

Complete Specification Published: May 3, 1967.

© Crown Copyright 1967.

Index at acceptance:—F4 R6

Int. Cl.:—B 60 q

## COMPLETE SPECIFICATION

### Improvements in or relating to Lighting Systems for Road Vehicles

I, JAMES CRAIGIE, a British Subject, of 8, Carnarvon Road, Reading, Berkshire, formerly of 13, Vastern Road, Reading, Berkshire, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to lighting systems for road vehicles and it is the object of the invention to provide an improved system which is capable of reducing the amount of dazzle to drivers of oncoming vehicles and to augment the area of road surrounding the vehicle which may be illuminated.

In accordance with the invention a lighting system for a road vehicle comprises at least one forward facing lamp arranged for directing illumination in front of the vehicle and at least one sideways facing lamp arranged for directing illumination on the road adjacent one side of the vehicle, each lamp presenting an elongated substantially rectangular illuminating aperture of which the major axis of the rectangle lies substantially parallel with the road surface.

Preferrably two forward facing lamps are provided, each lamp having two bulbs or filaments of different illuminating powers. It is also preferred that sideways facing lamps are provided for selective alternative illumination of the road on each side of the vehicle.

In a preferred wiring system a low powered bulb or filament in each of the forward facing lamps is connected as a parking lamp and a high powered bulb or filament is energised when the dip switch of the vehicle is operated by the driver and the main driving lamps are extinguished. Operation of the dip switch to extinguish the main driving lamps may simultaneously cause the sideways facing lamp bulbs or filament to become energised on the offside of the vehicle.

In order that the invention may be clearly

understood a preferred embodiment will now be more particularly described by way of example with reference to the accompanying drawings wherein:—

Fig. 1 shows a perspective view of a motor car equipped according to the invention, the areas of illumination provided by the lamps being illustrated diagrammatically,

Fig. 2 shows a diagrammatic cross sectional view of one of the lamps, and

Fig. 3 represents a wiring diagram.

Referring first to Fig. 1, the car in addition to the normal head, tail and number plate lamps is equipped with a pair of forward facing lamps 1 and two sideways facing wing lamps 2 on each side. In each of the lamps 1 and 2 the lamp glasses 8 in elevation are of substantially rectangular shape and the reflectors 7, as shown in Fig. 2, are part cylindrical and of semi-circular or parabolic cross section. Each lamp thus presents a substantially rectangular illuminating aperture which has its longer sides, and therefore the major axis of the rectangle defining the aperture, parallel to the road surface. Along the top edge of each lamp there is provided an upwardly extending lip 3 to prevent stray light being directed upwardly. Each of the lamps 1 and 2 when illuminated throws an illuminated area of substantially rectangular shape on to the road surface ahead of or to one side of the car as shown in Fig. 1 the illuminated areas from the lamps in each pair overlapping. The lamp filaments are accurately located on the optical centre lines of the reflectors and this arrangement in conjunction with the upstanding lips 3 produces well directed beams with sharp cut off at the top of the beam so as to prevent persons facing the lamps being dazzled.

The forward facing lamps incorporate two lighting filaments, one of low power, for example 6 watts, to replace the existing side lamps of the car, and a higher powered filament of

- for example, 30—36 watts in substitution for the conventional dip filament in the existing headlamps. The sideways facing wing lamps each have a single filament of, for example, 5 30 watts power and all the filaments are preferably of strip or elongated form to extend along the axes of the lamp reflectors. The filaments may be incorporated in the lamp structure or may be provided by replaceable 10 bulbs.
- A convenient wiring arrangement is shown diagrammatically in Fig. 3. In that figure the headlamps are denoted by the symbol H, the main lighting switch by the symbol MS, the 15 dip switch by the symbol DS, and the lead to the tail and number plate lamps by the symbol TL. For clarity the wiring to auxiliary lamps, for example, for the direction indicator and stop lamps has been omitted.
- 20 Single filament headlamp bulbs are employed to provide a main driving beam wired through the dip switch and the main lighting switch. The dip beam filaments of the forward facing lamps 1 are also connected through 25 the dip switch to the H terminal on the main switch, and the wing lamps are wired to the dip switch in parallel with the forward facing lamps through extra two way switches 4 and 5 and to the car battery through an on/off 30 switch 6. The switch 4 is a selector switch and is normally set to connect the wing lamps on the offside of the car according to whether the car is being driven on the left or right hand side of the road. The switch 5 can 35 be set to provide for the offside wing lamps being illuminated when the dip switch is operated to energise the dip filaments of the forward facing lamps, and the on/off switch 6 enables the wing lamps to be illuminated or 40 extinguished under direct control of the driver when switch 5 is operated to disconnect the wing lamps from the dip switch circuit. The low powered bulbs of the forward facing lights are connected to the side lamp terminal of 45 the main switch in parallel with the TL lead.
- In the normal use of the car driven on the left hand side of the road the switches 4, 5 and 6 are set as shown in Fig. 3. In 50 this position the higher powered filaments of the forward facing lamps and the filaments of the offside wing lamps are energised when the normal dip switch is operated by the driver to extinguish the main headlamp beam filaments and provide a dipped driving beam.
- 55 When this is done the wing lamps provide an illuminated area on the road along the offside of the car which increases the area of road illuminated for the benefit of the driver of an oncoming vehicle and any parked vehicles or pedestrians between the two vehicles which are not illuminated are silhouetted
- against the areas of illumination provided by the wing lamps.
- By appropriate operation of switches 4 and 5 the wing lamps on either side of the car may be illuminated under the control of the driver when, for example, it is found desirable to provide illumination for a person at the side of the car as a safety measure. By the use of the wing lamps in this way a person changing a punctured wheel on a badly lit road becomes clearly visible to other traffic. 65 Switch 4 further selects the appropriate side for illumination by switch DS and is set according to whether the car is being driven 70 on the left or right hand side of the road.
- Although in the particular embodiment above described, two wing lamps are specified, it will be understood that the number of lamps may be varied according to the size of the vehicle. Very short vehicles, for example, may only require a single wing lamp while lengthy load carrying vehicles may require more than two for adequate sideways illumination. In addition it may be found that only a single forward facing lamp is necessary to provide adequate illumination of the road surface in front of the vehicle. 75
- WHAT I CLAIM IS:—**
1. A lighting system for a road vehicle comprising at least one forward facing lamp arranged for directing illumination in front of the vehicle and at least one sideways facing lamp arranged for directing illumination on the road adjacent one side of the vehicle, each lamp presenting an elongated substantially rectangular illuminating aperture of which the major axis of the rectangle lies substantially parallel with the road surface. 90
  2. A lighting system according to claim 1 wherein sideways facing lamps are provided capable of illuminating the road on both sides of the vehicle. 95
  3. A lighting system according to claim 1 or 2 wherein each forward facing lamp includes two lighting filaments of different illuminating power. 100
  4. A lighting system according to claim 3 wherein the two filaments are capable of independent illumination and switching means are provided for illuminating a selected sideways facing lamp or lamps when the higher powered filament is illuminated. 105
  5. A lighting system according to any of the preceding claims wherein the lamps are provided with reflectors of part cylindrical configuration and of part circular or parabolic cross section and having their cylinder axes disposed substantially parallel with the road surface. 110
  6. A lighting system according to claim 5 wherein the top edge of each lamp is provided 115
  - 120

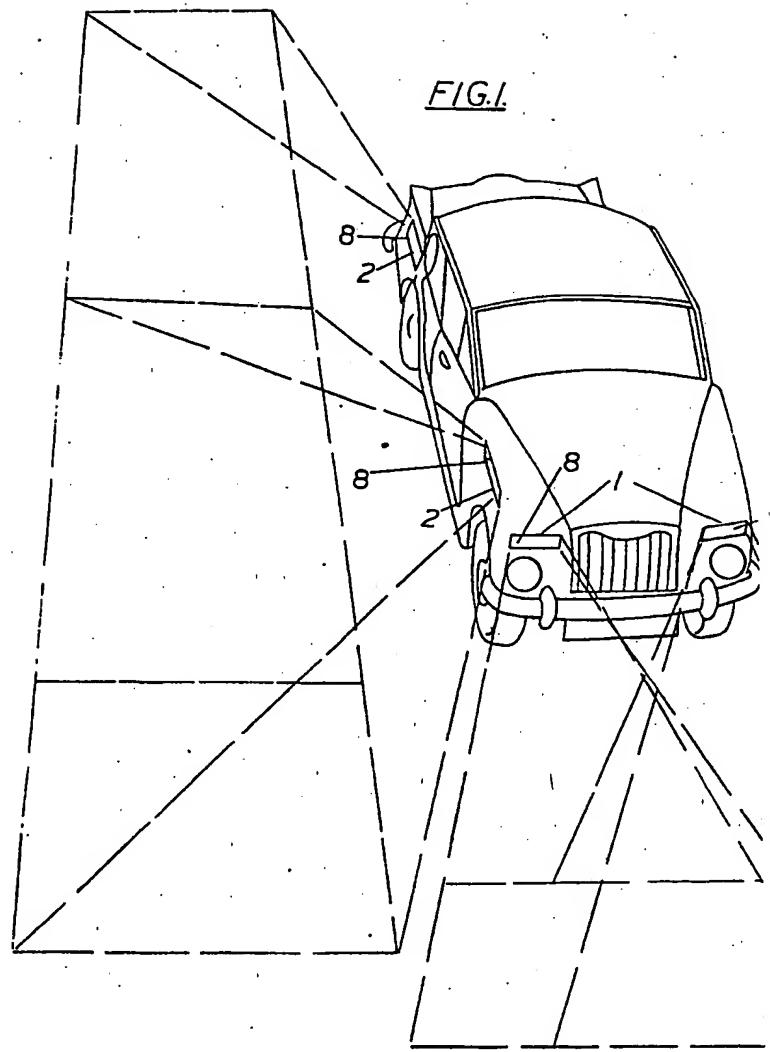
with an upwardly extending lip to prevent stray light from the lamp filaments being cast upwardly.

- 5 7. A lighting system for a road vehicle constructed and arranged substantially as herebefore described and shown in the accompanying drawings.

J. BENNETT & CO.  
Chartered Patent Agents.  
Nascott House,  
26 Bath Road, Slough,  
Buckinghamshire.  
Agents for the Applicant.

Leamington Spa: Printed for Her Majesty's Stationery Office, by the Courier Press.  
—1967. Published by The Patent Office, 25 Southampton Buildings, London, W.C.2,  
from which copies may be obtained.

F/G.1



1067845  
1 SHEET

COMPLETE SPECIFICATION  
*This drawing is a reproduction of  
the Original on a reduced scale*

FIG.2.

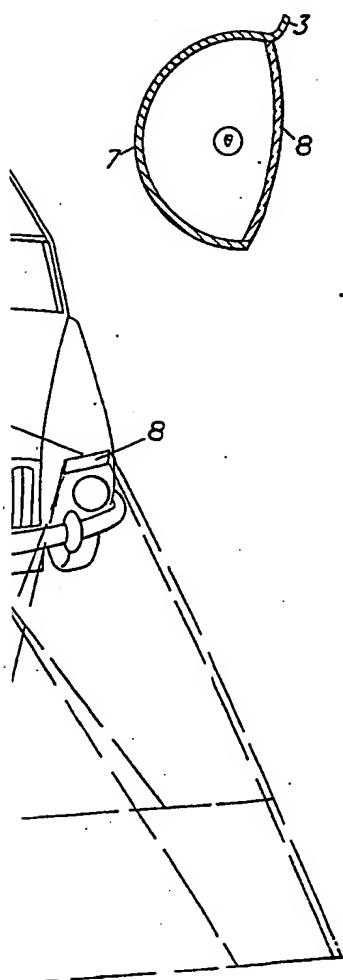
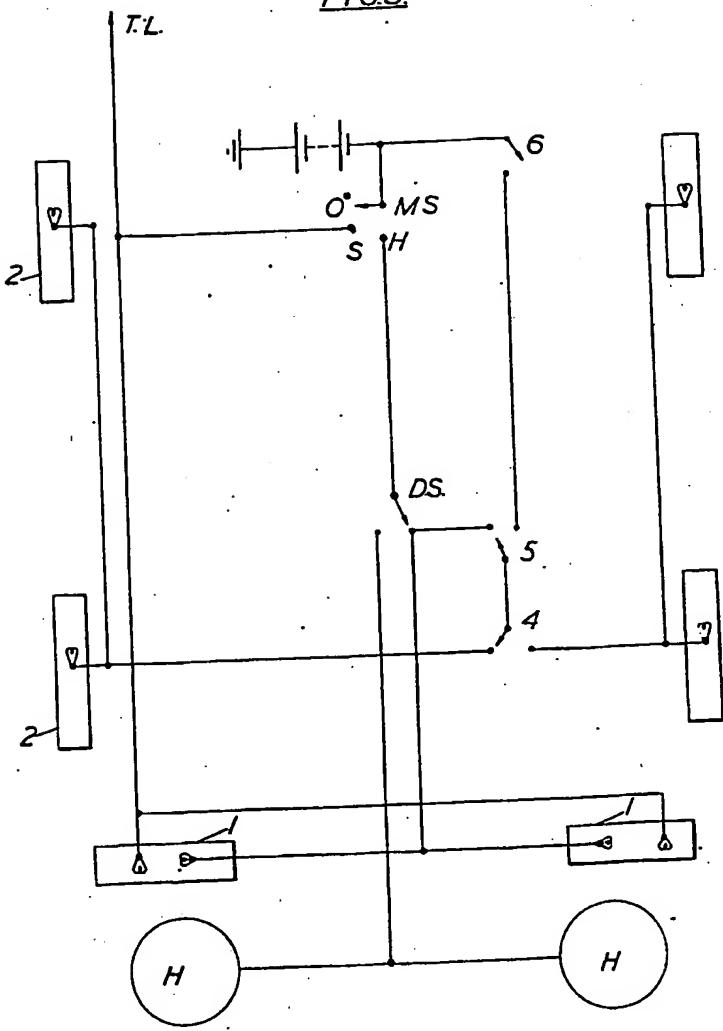


FIG.3



COMPLETE SPECIFICATION  
1067845 This drawing is a reproduction of  
1 SHEET the Original on a reduced scale

